RESEARCH LETTER

The Seasonal Trend of Brittle Nails: A Google Trends Analysis of English-speaking Countries

Eric MCMULLEN[1], Mahan MAAZI[2], Jonathan BERKOWITZ[3], Matthew BERKOWITZ[4] and Jeffrey DONOVAN[5,6*]
*[1]Division of Dermatology, Department of Medicine, University of Toronto, Toronto, ON, Canada, [2]Faculty of Medicine, University of British Columbia, Vancouver, BC, Canada, [3]Sauder School of Business, University of British Columbia, Vancouver, BC, Canada, [4]Statistics and Actuarial Science, Simon Fraser University, Burnaby, BC, Canada, [5]Department of Dermatology and Skin Science, University of British Columbia, Vancouver, BC, Canada, and [6]Donovan Hair Clinic, Whistler, BC, Canada. *Email: office@donovanmedical.com*
Submitted Dec 1, 2025. Accepted after revision Dec 18, 2025
Published Apr 22, 2026. DOI: 10.2340/actadv.v106.adv-2025-0238 Acta Derm Venereol 2026; 106: adv-2025-0238.

Dear Editor,

The term "brittle nails" refers to nail fragility that can be associated with underlying local or systemic disease, ageing or environmental factors. Low levels of humidity in the winter when the average nail plate water content is lowest may increase nail brittleness (1–3).

Google Trends (GT) aims to understand behaviours in Google search patterns for specific terms across time (4). Our study assessed changes in the Search Volume Index (SVI) across time, including evaluating the influence of temperature and humidity, to determine factors associated with searches for the term brittle nails.

We cross-sectionally analysed monthly seasonal GT search interest from January 2011 to January 2020 using the search term "brittle nails." Only English-speaking countries with SVI data in >90% of months were included (Canada, the United States, the United Kingdom and Australia).

Using R, the Prais–Winsten procedure for autoregressive, order-one process was applied separately to Australia and Northern Hemisphere countries. For all models, the outcome variable was SVI, and the covariates were time, temperature and humidity. Time was treated as a continuous predictor and then as a categorical predictor with 1 level per month (12 levels) in a second model for each dataset. Quarterly models were also converted from monthly to quarterly data, and time was treated as categorical with 1 level per season (4 levels). The Durbin–Watson statistic was confirmed before and after order autocorrelation.

The results demonstrated statistically significant seasonality in the Northern Hemisphere (Fig. S1; Table SI), and there was a significant seasonal effect on Google search patterns when using a quarterly (seasonal) model. The overall F-test for the Northern Hemisphere model with time treated as a quarterly categorical variable was significant ($p<0.001$) with an adjusted R-squared of 88.2%. When adjusted for humidity and temperature effects, SVI rates in the winter months (December, January and February in the Northern Hemisphere) were 43.4 units higher (95% CI 34.23, 52.57) compared to spring (March, April and May) and are adjusted for other covariates' effects. Humidity was a significant factor ($p=0.021$) in the quarterly model, leading to a 12.3-unit decrease in SVI (95% CI –22.18, –2.40) for every 1-unit increase in humidity. Temperature effects were not significant.

The overall F-test for the Northern Hemisphere model with time treated as a monthly categorical variable was also significant ($p<0.001$) with an adjusted R-squared of 59.8%. Temperature and humidity were not significant ($p=0.93$, $p=0.097$) in this monthly categorical model.

In the Southern Hemisphere (Australian) dataset, neither model demonstrated statistically significant seasonality. Temperature and humidity were not significant in each model.

We raise the possibility of a more pronounced seasonal effect on brittle nails in the Northern Hemisphere. While prior studies have explored biomechanical factors, hydration and seasonal influences on brittle nails (5), this is the first study to explicitly examine how humidity, temperature and month may influence Google search patterns.

Our study was limited to data from only 4 English-speaking countries, which may introduce sociocultural bias and limit generalizability. Restriction to Google as the single data source may limit representation of populations who use alternative search engines. Future research could investigate the seasonality of patient visits to healthcare practitioners for concerns about brittle nails.

ACKNOWLEDGEMENTS

Data availability statement: Available from the corresponding author upon reasonable request.

Conflicts of interest: JD has received honoraria from Pfizer and Vichy, has participated on advisory boards at Pfizer for payment, participates on the Board of Directors for the Scarring Alopecia Foundation, and is the active Director of the Evidence Based Hair Fellowship (EBHF) Training Program. The other authors have no conflicts of interest to declare.

REFERENCES

1. de Berker DAR, André J, Baran R. Nail biology and nail science. Int J Cosmet Sci 2007; 29: 241–275. https://doi.org/10.1111/j.1467-2494.2007.00372.x
2. Farran L, Ennos AR, Eichhorn SJ. The effect of humidity on the fracture properties of human fingernails. J Exp Biol 2008; 211: 3677–3681. https://doi.org/10.1242/jeb.023218

3. Piérard-Franchimont C, Jebali A, Ezzine N, Letawe C, Piérard GE. Seasonal variations in polymorphic nail surface changes associated with diabetes mellitus. Acad Dermatol Venereol 1996; 7: 182–196. https://doi.org/10.1111/j.1468-3083.1996.tb00618.x
4. Sivesind TE, Szeto MD, Kim W, Dellavalle RP. Google Trends in dermatology: scoping review of the literature. JMIR Dermatol 2021; 4: e27712. https://doi.org/10.2196/27712
5. van de Kerkhof PCM, Pasch MC, Scher RK, Kerscher M, Gieler U, Haneke E, et al. Brittle nail syndrome: A pathogenesis-based approach with a proposed grading system. J Am Acad Dermatol 2005; 53: 644–651. https://doi.org/10.1016/j.jaad.2004.09.002